Remarks

Claims 1 – 22 remain in the application. Claims 1-8, 10-14, and 16-22 are being amended.

Claim Objections

On page two in paragraph one of the Office Action the Examiner objected to claims 1, 5, 6, and 8 for informalities. In response, Applicant is amending the objected-to claims appropriately to correct them, and requests that the Examiner withdraw the objection. In addition Applicant is amending claims 2-4, 10, 13, 14, 16-19, and 22 for improved clarity. No new matter is introduced.

Claim Rejections under 35 U.S.C. §103

On page two in paragraph two the Examiner rejected claims 1-21 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,987,011 to Toh in view of U.S. Patent No. 6,721,800 to Basso et al.

Independent claim 1 (before amendment) recited, inter alia,

> routing a predefined percentage of the messages by choosing the neighbor node with the highest probability value in the row for a destination node (D) in the routing table; and
> routing the other messages by distributing the messages among the neighbor nodes according to the probability values given in the same row in the routing table.

Independent claim 11 (before amendment) recited, inter alia,

> a) routing a predefined percentage of the messages to a neighbor node having a highest probability value in a routing table; and
> b) routing a remaining percentage of messages among neighbor nodes according to a probability value associated with each neighbor node in the routing table.

On page three the Examiner stated "[r]egarding claims 1, 11 . . . Basso teaches . . . routing a predefined percentage (72 in figure 2) of the messages by choosing the neighbor

node (next hop0 60a in figure 2) with the highest probability value (action data 70 in figure 2) . . . ."

Applicant respectfully traverses. "[R]outing a predefined percentage of the messages (by choosing the) (to a) neighbor node (with the) (having a) <u>highest</u> probability value" as recited (emphasis added) in claims 1 and 11 and referred to in the Specification (on page 15 lines 18-20, paragraph 56) as "greedy" routing, "always chooses the highest weight entry for the next hop" (page 14 lines 28, 29, paragraph 53). "Greedy" routing is not disclosed in <u>Basso</u> which, in contrast, uses "regular" routing: As <u>Basso</u> explains,

> An action data field 70 includes threshold values used to weight the probability of each next hop and is used to determine which next hop will be chosen. In the action field 72, shown in FIG. 2, these values as being stored as cumulative percentages with the first cumulative percentage (60%) corresponding to next hop 0, the second cumulative percentage value (90%) corresponding to next hop 1, etc. *This means that*, the likelihood of routing a packet through next hop 0 is 60% (i.e., approximately 60% of traffic for the specified table entry should be routed to next hop 0), and, the likelihood of routing a packet through next hop 1 is 30% (i.e., approximately 30% of traffic for the specified table entry should be routed to next hop 1). This technique may be extended to offer as many next hops as desired or feasible. (<u>Basso</u>, col. 3, lines 34-48, emphasis added.)

Assuming arguendo that <u>Toh</u> teaches "greedy" (deterministic) routing (<u>Toh</u> col. 7 lines 61-62 (". . . only the best route will be selected . . ."); col. 10 line 21 to col. 11 line 10 (" . . . all other possible routes are then inactive); and Table 1 (Best Route Computation). Also see Applicant's Specification page 14 line 31 to page 15 line 8). Neither <u>Toh</u> nor <u>Basso</u> suggests combining greedy routing and regular routing. Applicant therefore respectfully requests that the Examiner withdraw the rejection and allow claims 1 and 11 which combine greedy routing and regular routing, as elaborated upon on page 15 in lines 18-31 (paragraph 56).

Further in response to the rejection of the independent claims 1 and 11 Applicant is amending both claims by adding the limitation of routing a "<u>tunable</u> predefined percentage." This limitation is supported in the Specification as filed on page 15 in line 23 (paragraph 56):

In this invention, it is proposed to use a mixture of the two rules: *h%* of messages shall be routed with *high* priority (greedy routing, highest weight) and (100-h)% of messages shall be routed with standard priority (regular routing, according to the weights in the RTs). *h* is a tunable parameter. (Specification page 15, lines 18-23 (paragraph 56).)

As the rejection might be applied to amended claims 1 and 11, Applicant respectfully traverses. The present invention's tunable predefined percentage determines how many messages are sent using greedy routing, and how many are sent using regular routing (which has its own set of percentages). Basso's percentages are used to guide regular routing. Rather than being "tunable," in Basso the percentage of messages routed to each given next hop depends upon (is equal to) the percentage of traffic that that hop is likely to be able to handle. Since Basso does not teach a "tunable predefined" percentage Basso cannot, as the Examiner concluded at the top of page four, make it "obvious . . . to modify Toh to include percentage routing among multiple next nodes using a probability value for each neighboring link . . . ." Applicant therefore respectfully requests that the Examiner withdraw the rejection and allow claims 1 and 11.

In addition to the limitations of claim 11, dependent claim 12 and independent claim 1 as amended recite the further limitation of "updating the probability values with quality measurements taken each time a data message is sent from the source node (S) to the destination node (D)." This limitation is supported in the Specification on page 15 in lines 12-14 (paragraph 55), on page 17 in line 16 (paragraph 63), and in claims 7 and 19 as filed. The data message limitation was formerly recited in claims 7 and 19, regarding which the Examiner (in the last full paragraph on page 6) conceded that "Toh does not teach that performing the route quality measurements and updating the routing tables are simply done by the data messages themselves." Yet, despite acknowledging ". . . even though lots of disadvantages as known in the art," the Examiner concluded that "[i]t would have been obvious . . . to modify Toh to include non-connection oriented communications . . . by piggybacking the signal packets (dummy packets) with the data packets in order to simplify the communications method."

Applicant respectfully traverses. The Examiner did not cite any suggestion supporting such a combination, the present invention is not "piggybacking . . . dummy packets with the data packets," and it is not apparent how this could "simplify the communications method." The Examiner's mere assertion that "[i]t would have been obvious . . . to modify Toh to include non-connection oriented communications . . . by piggybacking the signal packets (dummy packets) with the data packets to simplify the communications method" does not make it so. This is merely conclusory with no support found in Toh or Basso. "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." (*See In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006) cited with approval in *KSR Int'l v. Teleflex Inc.*, 127 S. Ct. 1727, 1740-41 (2007)). Applicant therefore respectfully requests that the Examiner withdraw the rejection and allow claims 1 and 12.

On page seven the Examiner stated "[r]egarding claims 8-10 and 20-22 . . . Basso teaches . . . probability value for each neighbor node (possible destination node) of the source node (see, e.g., col. 3, lines 34-36). It would have been obvious . . . to modify Toh to include computing new probability value as taught by Basso in order to properly assign the probability value based on the current traffic handling quality."

Applicant respectfully traverses. The cited (col. 3, lines 34-36) passage of Basso states: "An action data field 70 includes threshold values used to weight the probability of each next hop and is used to determine which next hop will be chosen." Other than mentioning a probability value of each neighbor hop, Basso does not, as to claims 8 and 20, teach or suggest that the "new probability value for the new neighbor node [is] based on the route quality rating for the neighbor node (j) and the source node (S) and the number of its associated neighbor nodes." As to claims 10 and 22, Basso does not teach or suggest any formula for computing a new probability value, much less Applicant's specific formula (as amended):

$$\begin{cases} \frac{1}{n+1} + \left(1 - \frac{1}{n+1}\right)(x - y) \; if \; said \; expression > 0 \\ 0 \; otherwise \end{cases}$$

03:OSL-023.AMT

Applicant therefore respectfully requests that the Examiner withdraw the rejection and allow claims 8-10 and 20-22.

The remaining dependent claims 2-7, 9, and 13-19 are allowable for at least the same reasons as the claims from which they depend, and recite additional limitations of their own.

Conclusion

Applicant has shown that the claims are not rendered obvious by the cited references. In light of the foregoing Amendments and Remarks, the Applicant respectfully requests reconsideration and the issuance of a Notice of Allowance.

Applicant invites the Examiner to contact the undersigned at (408) 297-9733 between 9:00 AM and 5:00 PM PST with any comments or questions.

Respectfully submitted,

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